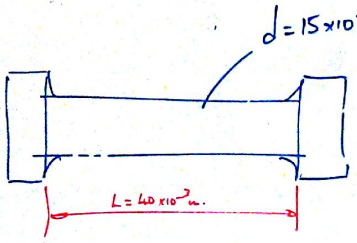
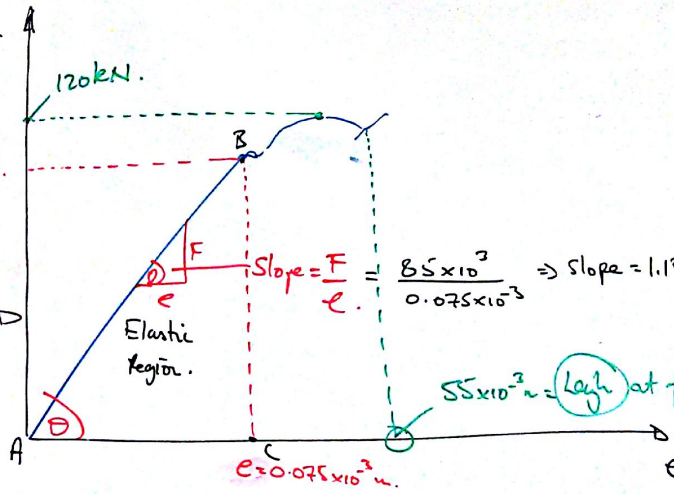
(11)



To Find $E = \frac{\sigma}{\epsilon} = \frac{\left(\frac{F}{A}\right)}{\left(\frac{e}{L}\right)}$

$\Rightarrow \boxed{E = \frac{F}{A} \cdot \frac{L}{e}}$ use.



$\Rightarrow E = \frac{F}{e} \cdot \frac{L}{A}$, $L = 40 \times 10^{-3}$

$\frac{F}{e} = 1.13 \times 10^9$

$A = \frac{\pi d^2}{4} = \frac{\pi (15 \times 10^{-3})^2}{4} = 176.71 \times 10^{-6}\ m^2$

$E = \frac{(1.13 \times 10^9) \cdot (40 \times 10^{-3})}{(176.71 \times 10^{-6})}$

$E = 255.79\ GN/m^2$ ✓

$\frac{N}{m} \cdot \frac{m}{m^2} = N/m^2$

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